

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 June 2004 (24.06.2004)

PCT

(10) International Publication Number
WO 2004/053130 A1

- (51) International Patent Classification⁷: **C12N 15/29**
- (21) International Application Number:
PCT/KR2003/002693
- (22) International Filing Date: 9 December 2003 (09.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/431,892 9 December 2002 (09.12.2002) US
- (71) Applicant (for all designated States except US): **TOOL-GEN, INC.** [KR/KR]; Daedeok Biocommunity, 461-6, Jeonmin-dong, Yuseong-gu, 305-390 Daejeon (KR).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **KIM, Jin-Soo** [KR/KR]; #202, Jeonmin-dong 299-8, Yuseong-gu, 305-390 Daejeon (KR). **SHIN, Hyun-Chul** [KR/KR]; Expo Apt. 407-1704, Jeonmin-dong, Yuseong-gu, 305-390 Daejeon (KR). **KWON, Heung-Sun** [KR/KR]; Sangroksu Apt. 103-1508, Mannyun-dong, Seo-gu, 302-781 Daejeon (KR).
- (74) Agent: **JANG, Seongku**; 19th Fl., KEC Building, #275-7., Yangjae-dong, Seocho-ku, Seoul 137-130 (KR).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **REGULATORY ZINC FINGER PROTEINS**

GAATTCTGTGCCCTCACTCCCCCTGGATCCCTGGGCAAAGCCCCAGAGGAAACACAAACAGGTTGTTGTA
ACACACCTTGCTGGGTACCACCATGGAGGACAGTTGGCTTATGGGGGTGGGGGTGCCTGGGGCCACGGA
GTGACTGGTGATGGCTATCCCTCCTTGAACCCCTCCAGCCTCCTCTTAGCTTCAGATTTGTTATTTGT
TTTTTACTAAGACCTGCTCTTTTCAGGTCTGTTGGCTCTTTTAGGGCTGAAGAAGGCCGAGTTGAGAAGG
GATGCAAGGGAGGGGGCCAGAATGAGCCCTTAGGGCTCAGAGCCTCCATCCTGCCCAAGATGTCTACAG
CTTGCTCCTGGGGTGCTAGAGGCGCACAAAGGAGAAAGTTAGTGGCTTCCCTTCCATATCCCGTTCAT
CAGCCTAGAGCATGGAGCCAGGTGAGGAGGCTGCCTGGGAGGGGGCCCTGAGCCAGGAAATAACATT
TACTAACTGTACAAAGACCTTGCTCCTGCTGCTGGGGAGCCTGCCAAGTGGTGGAGACAGGACTAGTGCA
CGAATGATGGAAGGGAGGGTTGGGGTGGGTGGGAGCCAGCCCTTTTCTCATAAGGGCCTTAGGACACC
ATACCGATGGAACCTGGGGTACTGGGGAGGTAACTAGCACCTCCACCAAACCACAGCAACATGTGCTGA
GGATGGGGCTGACTAGGTAAGCTCCCTGGAGCGTTTTGGTTAAATTGAGGAAATTGCTGCATTCCCATT
CTCAGTCCATGCCTCCACAGAGGCTATGCCAGCTGTAGGCCAGACCCTGGCAAGATCTGGGTGGATAATC
AGACTGACTGGCCTCAGAGCCCCAAGTTGTTCCCTGGGGCAGCCTGGAAATAGCCAGGTCAGAAACCAG
CCAGGAATTTTCCAAGCTGCTTCCATATGCAAGAATGGGATGGGGGCCTTTGGGAGCACTTAGGGAAG
ATGTGGAGAGTTGGAGGAAAAGGGGGCTTGAGGTAAGGGAGGGGACTGGGGGAAGGATAGGGGAGAAGC
TGTGAGCCTGGAGAAGTAGCCAAGGGATCCTGAGGGAATGGGGGAGCTGAGACGAAACCCCATTTCTAT
TCAGAAGATGAGCTATGAGTCTGGGCTTGGGCTGATAGAAGCCTTGGCCCCCTGGCCTGGTGGGAGCTCTG
GGCAGCTGGCCTACAGACGTTCTTAGTGCTGGCGGGTAGGTTGAATCATCACGAGGCCCTGGCCTCC
ACCCGCCCCCACCAGCCCCCTGGCCTCAGTTCCTGGCAACATCTGGGGTTGGGGGGGCAGCAGGAACAA
GGGCTCTGTCTGCCAGCTGCCTCCCCCTTTGGGTTTTGCCAGACTCCACAGTGCATACGTGGGCTCCA

(57) Abstract: Disclosed are chimeric zinc finger proteins that can regulate endogenous genes. Examples of such proteins include proteins that can regulate VEGF-A expression. The proteins and nucleic acid encoding them can be used to modulate angiogenesis.